

ABSTRACT

The invention is a method of irradiating at least one surface of a three-dimensional object (36, 114) with a desired ultraviolet light irradiance flux produced by an ultraviolet light source (22, 102). The invention determines a position at which the three-dimensional object will be positioned relative to the ultraviolet light source when the at least one surface (35, 113) is to be irradiated with the desired ultraviolet light flux; determines an unmodified ultraviolet light flux which would irradiate the at least one surface when the ultraviolet light source is activated while the three-dimensional object is at the position relative to the ultraviolet light source; produces an optical element (30, 112), based upon the unmodified ultraviolet light flux and the desired ultraviolet light fluxes, which provides a modified wavefront of the ultraviolet light flux to irradiate the at least one surface with the desired ultraviolet light flux; positions the optical element in the path which the wavefront of the ultraviolet light from the ultraviolet light source would follow in irradiating the at least one surface; and activates the ultraviolet light source to image transmit the ultraviolet light flux from the ultraviolet light source on to the optical element to cause irradiation of the at least one surface with the desired light flux.